

Python Data Analytics Course Outline



Course Overview

Our 6-Week **Python Data Analytics** program is designed to develop your analytical skills using Python. Each module blends theoretical concepts with practical applications, focusing on essential tools and techniques in data analytics. You will gain hands-on experience working with real-world datasets, performing data cleaning, analysis, and visualization, culminating in a final project to solidify your learning.





Module 1: Python Fundamentals



Topics:

- Introduction to Python and its use cases in data analysis
- Setting up the Python environment (Anaconda, Jupyter Notebook, VS Code)
- Python syntax, variables, and data types
- Input/output operations



- Writing and running your first Python script
- Practice with basic I/O operations





Module 2: Control Structures and Loops

Duration: 1 week

Topics:

- Conditional statements (if, else, elif)
- Loops (for and while)
- Nesting and control flow (break, continue)



- Writing programs with decision-making and iterations
- Creating simple number sequence generators
- **Outcomes:**

Students will develop logic using loops and conditions to solve proble



Module 3: Functions and Modules

Duration: 1 week

Topics:

- Defining and calling functions
- Parameters, arguments, and return values
- Built-in Python modules (math, random)
- Writing custom modules

Hands-on Exercises

- Create reusable functions for common tasks
- Use built-in modules to perform random sampling and calculations

Outcomes: Students will write modular and reusable code for efficiency.



Module 4: Data Structures in Python

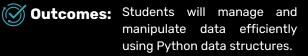
Duration: 1 week

Topics:

- Lists, tuples, and dictionaries
- Operations on data structures (add, remove, modify)
- Iterating through data structures
- Understanding sets and their applications

Mands-on Exercises

- Building a contact book using dictionaries
- Working with lists to analyze simple datasets









Assessment and Certification



Weeky Assessments

Quizzes, assignments, and mini-projects.





Hands-on assessments in Python



Final Evaluation

Capstone project grading (analysis, visualization).

Certification



IoA-Endorsed Certificate or equivalent upon successful completion.

Tools For Python Data Analyst

This 6-week program ensures a gradual build-up of skills, with ample time for practice and mastery.









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